

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0601
of 14 October 2020

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

Fall Protection System LUX-top® ASP for concrete
structures

Product family
to which the construction product belongs

Anchor Devices for Fastening Personal Fall Protection
Systems to Concrete Structures

Manufacturer

ST QUADRAT Fall Protection S.A.
45, rue Fuert
L-5410 BEYREN
LUXEMBURG

Manufacturing plant

ST QUADRAT Fall Protection S.A.
45, rue Fuert
L-5410 Beyren

This European Technical Assessment
contains

12 pages including 8 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 331072-00-0601

European Technical Assessment

ETA-20/0601

English translation prepared by DIBt

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Specific Part**1 Technical description of the product**

The subject of this assessment are anchor points for protecting persons (operators) working at heights against a fall. The fall protection systems are made of stainless steel 1.4301 / 1.4307. It is fastened to reinforced normal concrete (cracked or uncracked), strength classes C20/25 to C50/60 and pre-stressed concrete with at least the strength class C45/55 according to EN 206. The fall protection systems are fastened to the concrete with the different fasteners which can be seen in the annexes.

This ETA includes the products listed in the following Table 1:

Table 1: Products of this ETA

Annex No.	Trade Name (Product of this ETA)	Fastener
2	LUX-top® ASP EV2s - Ø 18	FAZ II 12 /20 R
3	LUX-top® ASP EV2 - Ø 18 (reduced anchorage depth)	FAZ II 10 /20 K R
4	LUX-top® ASP EV2 - Ø 18	FAZ II 10 /20 R
5	LUX-top® ASP EV2 - Ø 26	FAZ II 10 /20 R
6	LUX-top® ASP EV10 II - Ø 18	FHY M10 - A4
7	LUX-top® ASP EV10 III - Ø 26	FHY M10 - A4

The components and the system setup of the product are given in Annex (1-7).

2 Specification of the intended use in accordance with the applicable EAD 33-1072-01-0601

The fall protection systems listed in Table 1 is used to protect operators working at height (max. 3 persons), by arresting them in a fall. The operators attach themselves to the eye using e.g. ropes and karabiners. In the case of a fall the fall protection systems listed in Table prevent the fall and resulting physical damage assuming the correct usage by the operator. The fall protection systems listed in Table are designed for use in all areas of industry, construction and maintenance.

The intended use of the fall protection systems listed in Table 1 is the attachment to flat roofs or other flat surfaces (e.g. concrete walls) made of concrete. The force applied should usually be perpendicular ($90^\circ \pm 5^\circ$) to the fastener. Another load direction is possible if this is specified in the annexes intended only when the direction of force still applies at a 90° angle to the fastening axis.

The performances given in Section 3 are only valid if the of the products listed in Table 1 are used in compliance with the specifications and conditions given in Annexes 1 - 7.

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the products listed in Table 1 of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	Class A1

3.2 Safety and accessibility in use (BWR 4)

Essential characteristic	Performance
Static loading	Annexes 2-7
Dynamic loading	Annexes 2-7
Check of deformation capacity in case of constraining forces	Annexes 2-7
Durability	No performance assessed

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 331072-01-0601, the applicable European legal act is: Decision (EU) 2018/771.

The system to be applied is: 1+

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 14 October 2020 by Deutsches Institut für Bautechnik

BD Dipl.-Ing. Andreas Kummerow
Head of Department

beglaubigt:
Hahn

This ETA includes the products listed in Table 1:

Table 1: Products included in this ETA

Annex	Tradename (Product of this ETA)	Fastener	Supporting structure
2	LUX-top ASP EV2s - Ø18	bolt anchor FAZ II 12/20 R ^b	reinforced concrete C20/25 to C50/60 ^a (cracked or uncracked)
3	LUX-top ASP EV2 - Ø18 (reduced anchorage depth)	bolt anchor FAZ II 10/20 K R ^b	reinforced concrete C20/25 to C50/60 ^a (cracked or uncracked)
4	LUX-top ASP EV2 - Ø18	bolt anchor FAZ II 10/20 R ^b	reinforced concrete C20/25 to C50/60 ^a (cracked or uncracked)
5	LUX-top ASP EV2 - Ø26	bolt anchor FAZ II 10/20 R ^b	reinforced concrete C20/25 to C50/60 ^a (cracked or uncracked)
6	LUX-top ASP EV10 II	FHY M10 A4	Prestressed concrete hollow core slab min. C45/55 ^a
7	LUX-top ASP EV10 III	FHY M10 A4	Prestressed concrete hollow core slab min. C45/55 ^a

Annexes 2 to 7 show the components and the system structure of the products.

All components of the anchor device can be used in weathered outdoor areas.

^a EN 206:2013+A1:2016 Concrete: specification, properties, production and conformity

^b ETA-05/0069 fischer Anchor bolts FAZ II

Fall Protection System LUX-top® ASP for concrete substructures

Overview and design values

Annex 1.1

Design values of actions

$$F_{Ed} = F_{Ek} \cdot \gamma_F$$

The recommended partial factor γ_F is 1,5.

The recommended partial factor is used in order to determine the corresponding design actions, provided no partial factor is given in national regulations or national Annexes to Eurocode 0. That leads to the following values:

Example:

For one user: $F_{Ed} = F_{Ek} \cdot \gamma_F = 6 \text{ kN} \cdot 1,5 = 9 \text{ kN}$

For two Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6 + 1) \text{ kN} \cdot 1,5 = 10,5 \text{ kN}$

For three Users: $F_{Ed} = F_{Ek} \cdot \gamma_F = (6 + 2) \text{ kN} \cdot 1,5 = 12 \text{ kN}$

Static loading / design resistance

$$F_{Rd} = F_{Rk} / \gamma_M$$

The recommended partial factor γ_M is 1,5, provided no partial factor is given in national regulations or national Annexes to Eurocode 2.

Dynamic loading / design resistance

See max. number of users on following annexes.

Deformation capacity

See deformation at 0,70 kN on following annexes.

Fall Protection System LUX-top® ASP for concrete substructures

Overview and design values

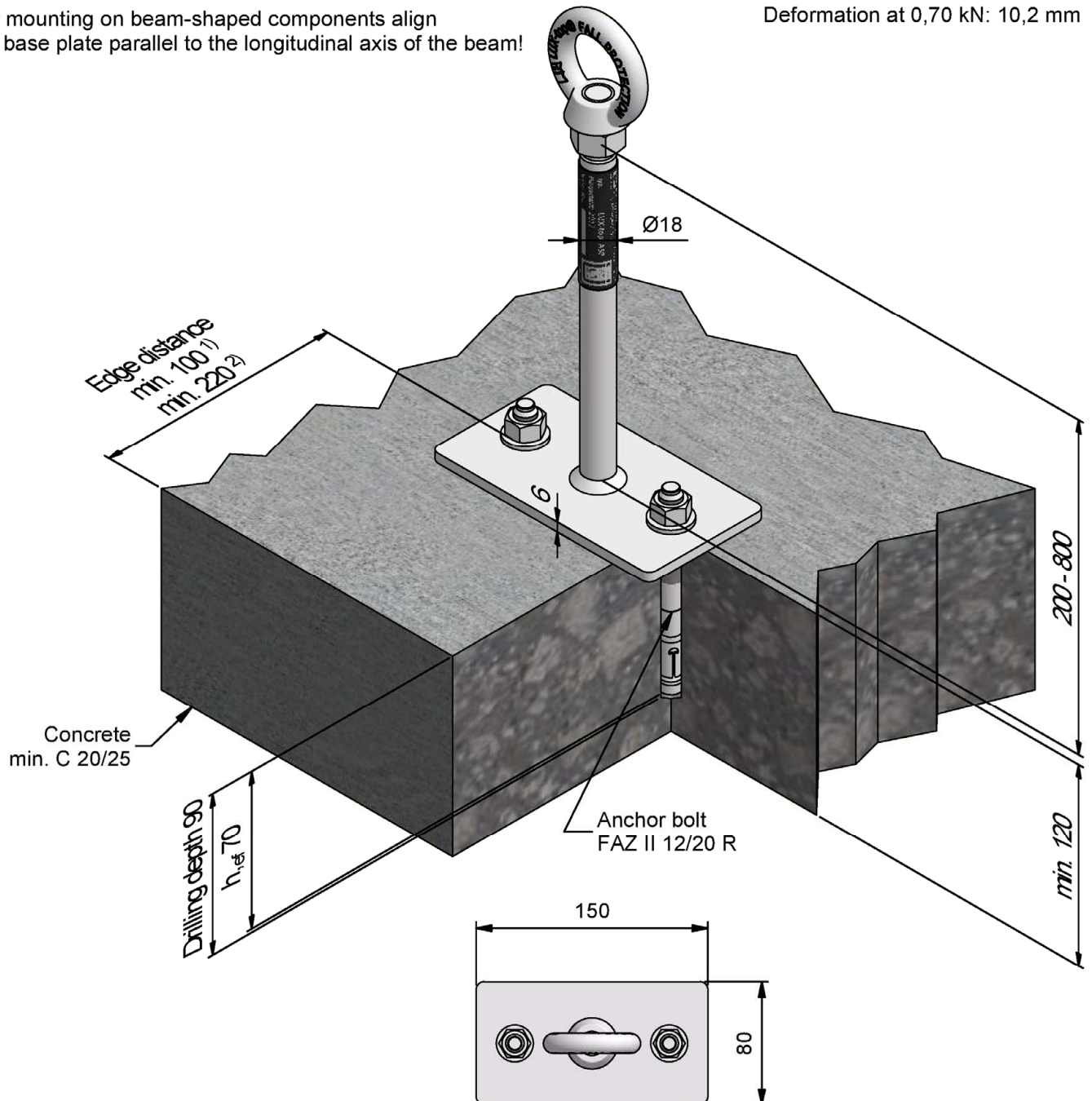
Annex 1.2

Design values of the load capacity

Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV2s - Ø18	Concrete ¹⁾	transversal axial	12,2 /	3 /
LUX-top® ASP EV2s - Ø18	Concrete ²⁾	transversal axial	12,7 17,5	3 3

For mounting on beam-shaped components align the base plate parallel to the longitudinal axis of the beam!

Deformation at 0,70 kN: 10,2 mm



All dimensions in [mm]

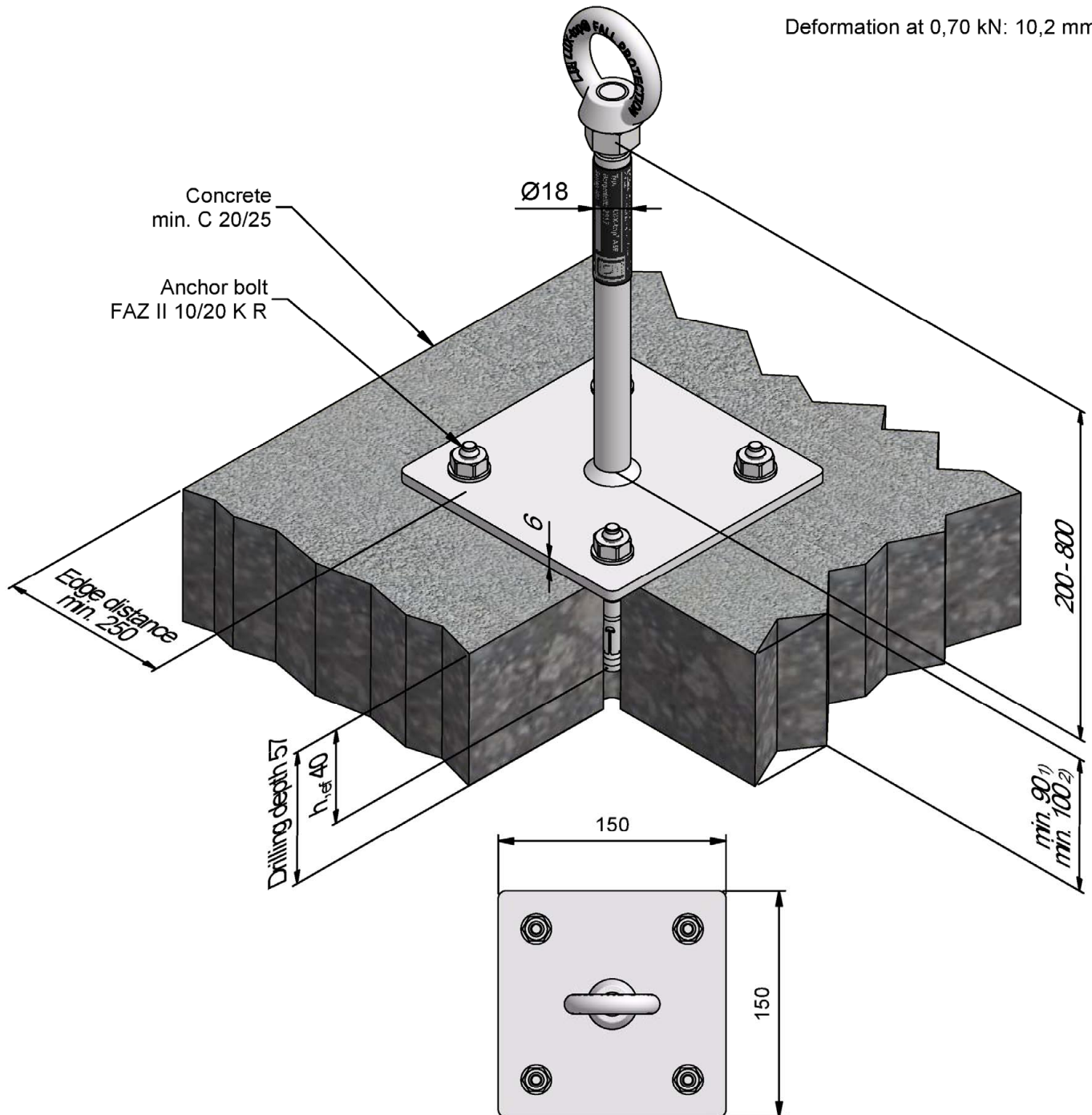
Fall Protection System LUX-top® ASP for concrete substructures

LUX-top® ASP EV2s - Ø18

Annex 2

Design values of the load capacity				
Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV2 - Ø18	Concrete ¹⁾	transversal axial	9,2 16,0	1
LUX-top® ASP EV2 - Ø18	Concrete ²⁾	transversal axial	12,0 16,0	3

Deformation at 0,70 kN: 10,2 mm



All dimensions in [mm]

Fall Protection System LUX-top® ASP for concrete substructures

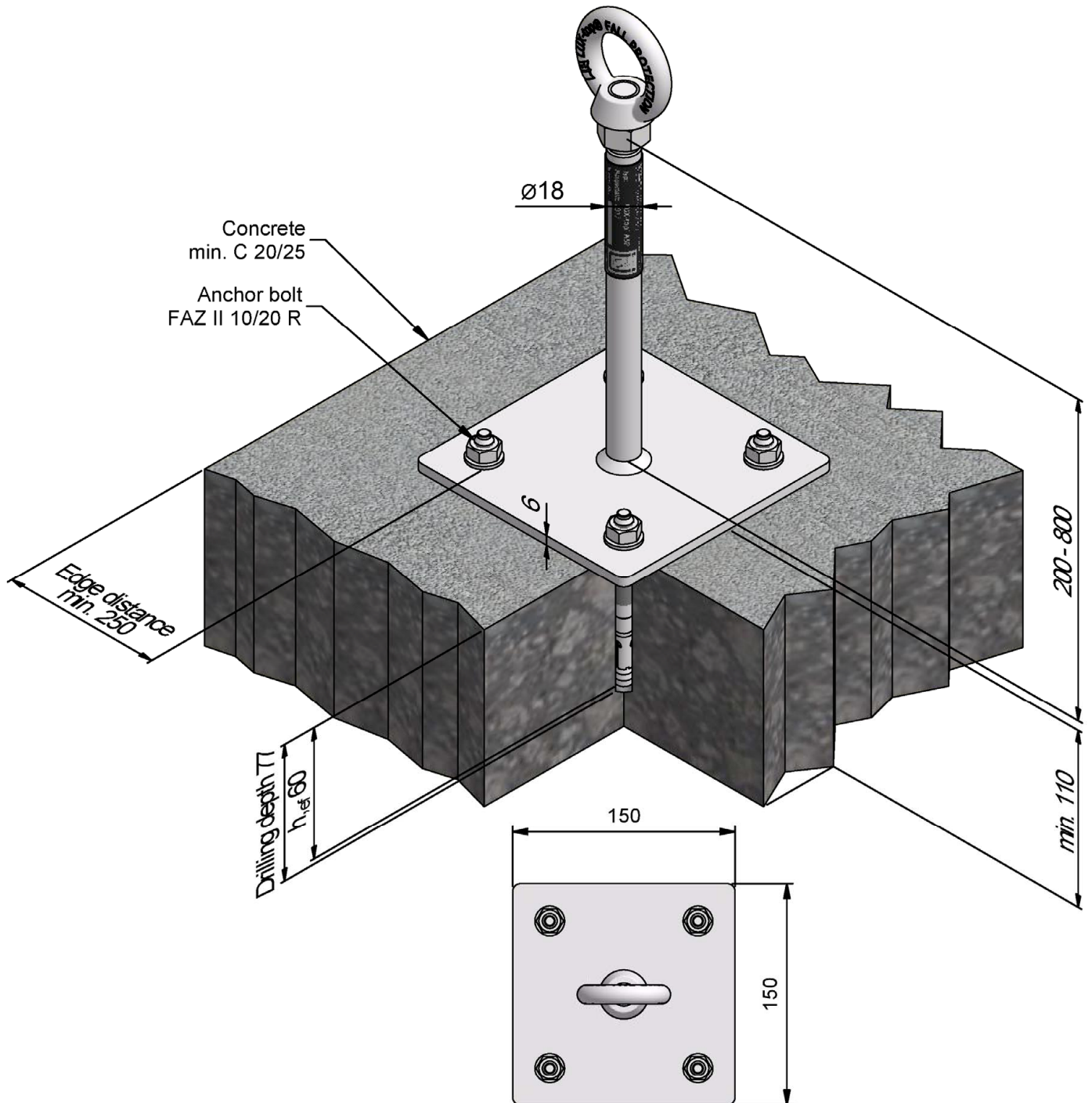
LUX-top® ASP EV2 - Ø18 - reduced anchorage depth

Annex 3

Design values of the load capacity

Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV2 - Ø18	Concrete	transversal	13,3	3
		axial	22,4	3

Deformation at 0,70 kN: 10,2 mm



All dimensions in [mm]

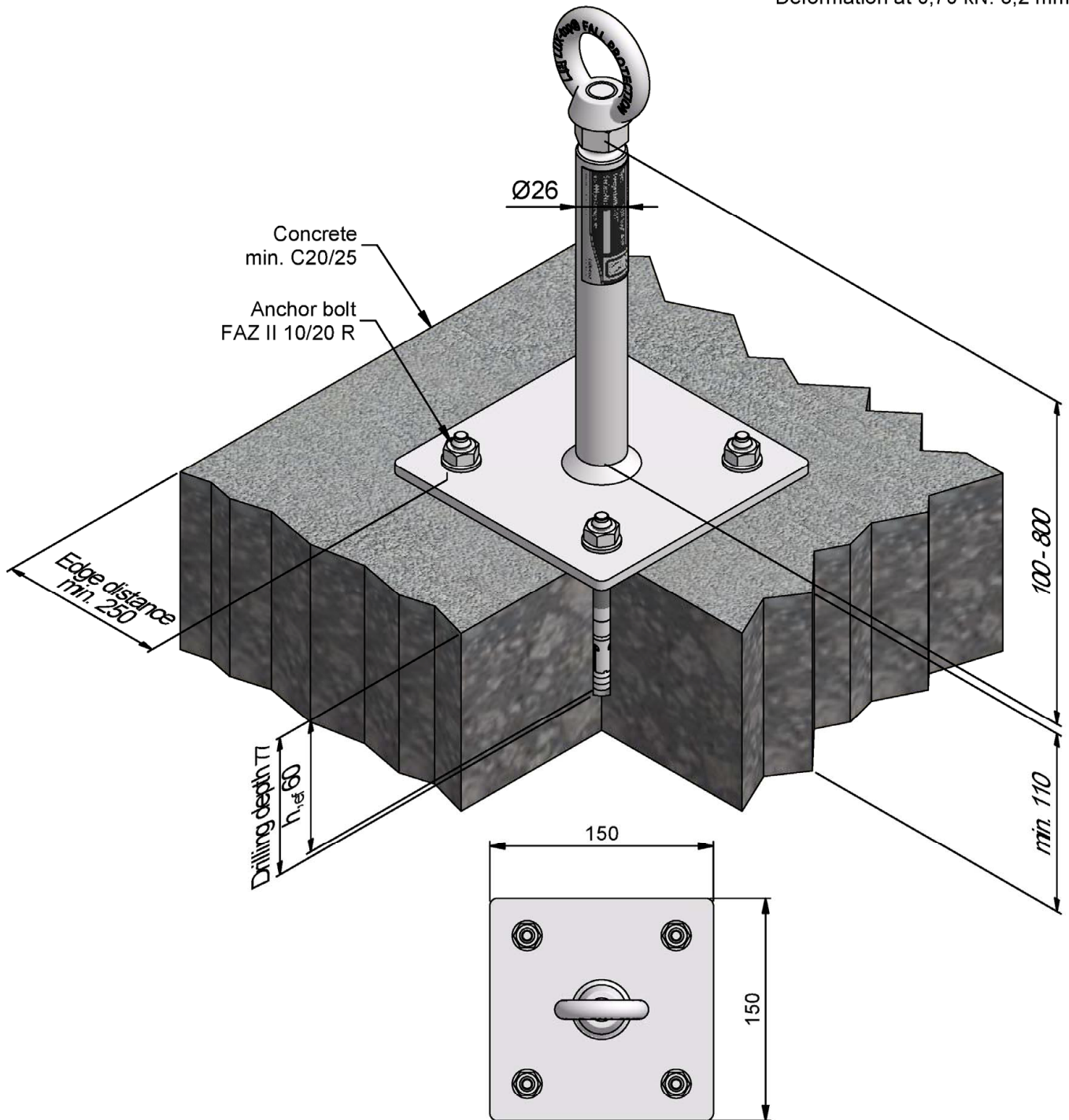
Fall Protection System LUX-top® ASP for concrete substructures

LUX-top® ASP EV2 - Ø18

Annex 4

Design values of the load capacity				
Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV2 - Ø26	Concrete	transversal	13,3	3
		axial	22,4	3

Deformation at 0,70 kN: 3,2 mm



All dimensions in [mm]

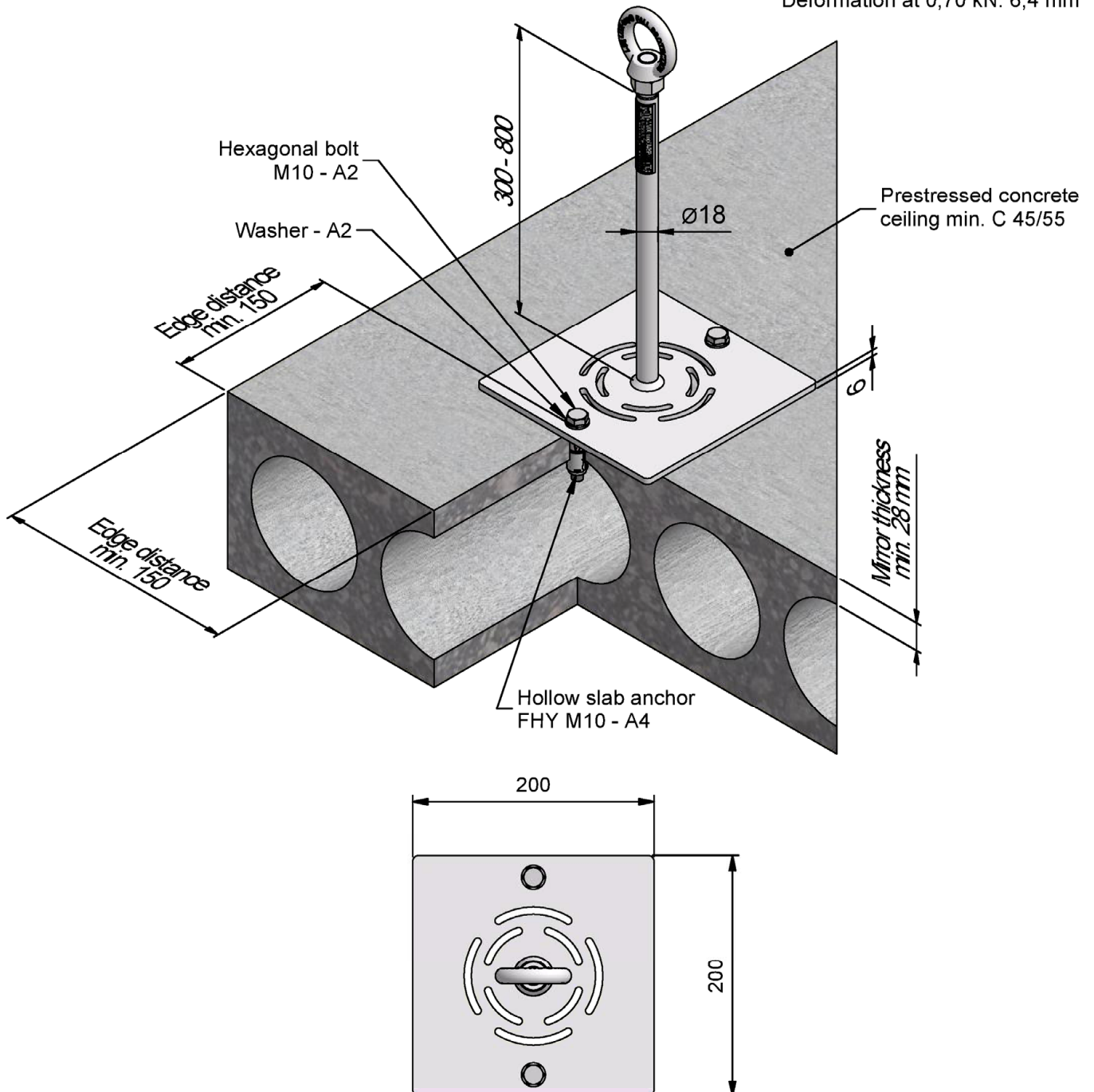
Fall Protection System LUX-top® ASP for concrete substructures

LUX-top® ASP EV2 - Ø26

Annex 5

Design values of the load capacity				
Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV10 II	Prestressed concrete hollow core slab	transversal	12,0	3
		axial	12,0	3

Deformation at 0,70 kN: 6,4 mm



All dimensions in [mm]

Fall Protection System LUX-top® ASP for concrete substructures	Annex 6
LUX-top® ASP EV10 II	

Design values of the load capacity				
Anchor device	Support structure	Load direction	$F_{R,d}$ [kN]	Max. number of users
LUX-top® ASP EV10 III	Prestressed concrete hollow core slab	transversal	12,0	3
		axial	12,0	3

Deformation at 0,70 kN: 3,2 mm

300 - 800

Ø26

6

Edge distance min. 150

Edge distance min. 150

Mirror thickness min. 28 mm

Hollow slab anchor FHY M10 - A4

236

236

All dimensions in [mm]

Fall Protection System LUX-top® ASP for concrete substructures	Annex 7
LUX-top® ASP EV10 III	